L22DC

SAVILLS I.M. SGR S.P.A.
Sede: Via San Paolo
20121 Milano

LIN10
Via della Costa, 2, Treviglio (BG), 24047
Edificio Ad Uso Data Center

VALUTAZIONE IMPATTO AMBIENTALE
ai sensi degli artt. 23-25 del D.Lgs. n.152/2006

Relazione PUE

Documento
4210_ES V PUE 01

Revisione
V.00

Data
Ottobre 2026

Proprietario
Savills I.M. SGR S.p.A

Il tecnico
Ing. Roberto Cereda

Firmato digitalmente da:
PAOLA ENRICA FIORINI
Data: 28/10/2026 12:15:43

Lombardini22 S.p.A.
Via Lombardini 22 20143 Milan, Italy
P +39 02 36 59 62 00
F +39 02 83 20 13 97
info@l22.it www.l22.it
Legal Head Office: Via Lombardini 22, 20143 Milan, Italy

CLIENT:

SAVILLS INVESTMENT MANAGEMENT SGR S.P.A.
Milano, via San Paolo, n. 7

TECHNICAL AUTHORITY:

ECHELON DATA CENTRES
Dublin, 19/20 The Cubes Offices, Beacon South Quarter, D18 H3V8.
Phone: +353 (0) 1 9053563

Project
LIN10

Document: LIN10-LIN10-L22-XX-CA-M-00003 - PUE Calculation

Date (First submission)
19th of September 2025

Document Number	LIN10-LIN10-L22-XX-CA-M-00003
Revision	P01
Date	19 September 2025
Status	Submission
Description	RIBA 3 - 100% Issue

SUMMARY

1. INTRODUCTION 3
2. POWER USAGE EFFECTIVENESS 4

1. INTRODUCTION

This document LIN10-LIN10-L22-XX-CA-M-00003 - PUE Calculation is an integral part of the RIBA3 stage design related to the construction of a new site for data center use, located in Via della Costa, 2, which is in Treviglio (BG).

This project was drawn up by Lombardini22 S.p.A. with registered office in via Lombardini 22 in Milan.

The examination of all documents is a prerequisite for the comprehension of the design. Everything contained in it is also essential for the correct reading of the indications and prescriptions contained in the other project documents. If there are any doubts about the correct application of their content, the designer must be informed so that he can give the necessary clarifications in time.

The designer cannot be held responsible for any consequence whatsoever, due to failure to comply with the above.

2. POWER USAGE EFFECTIVENESS

Here after is attached the specific Power Usage Effectiveness calculations.

PUE Calculation 100 %							
Vendor Notes							
Reservation Size (MW)							
	Number of Components Total	**Peak Power per Component (kW)**	**Annualized Average Power per Component (kW)**	**Number of Components Active**	**Annualized Average Total Power (kW)**	**Peak Total Power (kW)**	**Notes**
Non UPS Loads							
Heat Rejection Equipment (eg. Chillers)	16	331,58	127,29	16	2036,57kW	5305,32kW	refer to Cooling Equipment Annual kWh - n.2 system, 1 per each datahall, N+1 (7+1),
Building Shared LV Systems (BMS, CCTV etc)	1	26,80	26,80	1	26,80kW	26,80kW	
Ground Floor Light & Power	1	144,25	18,05	1	18,05kW	144,25kW	
First Floor Light & Power (if applicable)	1	144,25	18,05	1	18,05kW	144,25kW	
Second Floor Light & Power (if applicable)	0	0,00	0,00	0	0,00kW	0,00kW	
Life & Safety Power	1	13,40	13,40	1	13,40kW	13,40kW	
Lifts Passenger (if applicable)	2	10,00	1,14	2	2,28kW	20,00kW	
Lifts Service (if applicable)	1	20,00	1,14	1	1,14kW	20,00kW	
HVAC for office and critical support areas	1	156,15	140,30	1	140,30kW	156,15kW	
Other - Please describe	0	0,00	0,00	0	0,00kW	0,00kW	
				Total Non UPS Load	**2256,60kW**	**5830,17kW**	
IT UPS							**BR 6+1 per each DHs - 14 modules in total**
IT Load - 1 chiller module	10	1750,00kW	1750,00kW	10	17500,00kW	17500,00kW	Modules that supply 1 chiller and more IT load
Battery Charging + Losses	10	70,00kW	70,00kW	10	700,00kW	700,00kW	4% battery recharge
IT Load - 2 chiller module	2	1250,00kW	1250,00kW	2	2500,00kW	2500,00kW	Modules that supply 2 chiller and less IT load
Battery Charging + Losses	2	50,00kW	50,00kW	2	100,00kW	100,00kW	4% battery recharge
IT Load - Reserve	2	1750,00kW	0,00kW	0	0,00kW	0,00kW	Reserve
Battery Charging + Losses	2	70,00kW	0,00kW	0	0,00kW	0,00kW	4% battery recharge
				Total IT UPS Input	**20800,00kW**	**20800,00kW**	
Mech UPS							
Pump Motors					0,00kW	0,00kW	*Included in the chiller load calculation*
Data Hall Cooling Units (CRAH, FW, etc)	2	714,00kW	608,00kW	2	1216,00kW	1428,00kW	*per each Datahall: 18 FWU in N+2, n.4 systems each with 4 CDU in N+1, (FWU = 29kW, CDU = 16kW)*
Critical Support Area Cooling Units	2	66,05kW	32,38kW	2	64,76kW	132,10kW	*AHUs serving DHs, Crahs*
Building Low Voltage Critical Loads	1	50,00kW	50,00kW	1	50,00kW	50,00kW	*MDF and IDF rack loads*
Fuel System Loads					0,00kW	0,00kW	*n/a - Belly tank*
Battery Charging + Losses	1	33,20kW	27,62kW	1	27,62kW	33,20kW	*4% battery recharge*
Other - Please describe					0,00kW	0,00kW	*n/a*
				Total Mech UPS Input	***1358,38kW***	***1643,30kW***	

Maximum Facility Load	**24414,98kW**	**28273,47kW**
Facility PUE	**1,221**	**1,414**

PUE Calculation 75 %

Vendor Notes	
Reservation Size (MW)	

	Number of Components Total	Peak Power per Component (kW)	Annualized Average Power per Component (kW)	Number of Components Active	Annualized Average Total Power (kW)	Peak Total Power (kW)	Notes
Non UPS Loads							
Heat Rejection Equipment (eg. Chillers)	16	232,05	84,96	16	1359,44kW	3712,73kW	refer to Cooling Equipment Annual kWh - n.2 system, 1 per each datahall, N+1 (7+1),
Building Shared LV Systems (BMS, CCTV etc)	1	26,80	26,80	1	26,80kW	26,80kW	
Ground Floor Light & Power	1	144,25	18,05	1	18,05kW	144,25kW	
First Floor Light & Power (if applicable)	1	144,25	18,05	1	18,05kW	144,25kW	
Second Floor Light & Power (if applicable)	0	0,00	0,00	0	0,00kW	0,00kW	
Life & Safety Power	1	13,40	13,40	1	13,40kW	13,40kW	
Lifts Passenger (if applicable)	2	10,00	1,14	2	2,28kW	20,00kW	
Lifts Service (if applicable)	1	20,00	1,14	1	1,14kW	20,00kW	
HVAC for office and critical support areas	1	156,15	140,30	1	140,30kW	156,15kW	
Other - Please describe	0	0,00	0,00	0	0,00kW	0,00kW	
				Total Non UPS Load	**1579,47kW**	**4237,58kW**	

IT UPS							**BR 6+1 per each DHs - 14 modules in total**
IT Load - 1 chiller module	10	1750,00kW	1750,00kW	10	13125,00kW	13125,00kW	Modules that supply 1 chiller and more IT load
Battery Charging + Losses	10	70,00kW	70,00kW	10	525,00kW	525,00kW	4% battery recharge
IT Load - 2 chiller module	2	1250,00kW	1250,00kW	2	1875,00kW	1875,00kW	Modules that supply 2 chiller and less IT load
Battery Charging + Losses	2	50,00kW	50,00kW	2	75,00kW	75,00kW	4% battery recharge
IT Load - Reserve	2	1750,00kW	0,00kW	0	0,00kW	0,00kW	Reserve
Battery Charging + Losses	2	70,00kW	0,00kW	0	0,00kW	0,00kW	4% battery recharge
				Total IT UPS Input	**15600,00kW**	**15600,00kW**	

Mech UPS							
Pump Motors					0,00kW	0,00kW	*Included in the chiller load calculation*
Data Hall Cooling Units (CRAH, FW, etc)	2	714,00kW	608,00kW	2	1216,00kW	1428,00kW	*18 FWU in N+2, 12 CDU in N+1 per each Datahall (FWU = 29kW, CDU = 16kW)*
Critical Support Area Cooling Units	2	66,05kW	32,38kW	2	64,76kW	132,10kW	
Building Low Voltage Critical Loads	1	50,00kW	50,00kW	1	50,00kW	50,00kW	*MDF and IDF rack loads*
Fuel System Loads					0,00kW	0,00kW	*n/a - Belly tank*
Battery Charging + Losses	1	33,20kW	27,62kW	1	27,62kW	33,20kW	
Other - Please describe					0,00kW	0,00kW	*n/a*
				Total Mech UPS Input	***1358,38kW***	***1643,30kW***	

Maximum Facility Load	**18537,84kW**	**21480,89kW**
Facility PUE	**1,236**	**1,432**

PUE Calculation 50 %

Vendor Notes	
Reservation Size (MW)	

	Number of Components Total	Peak Power per Component (kW)	Annualized Average Power per Component (kW)	Number of Components Active	Annualized Average Total Power (kW)	Peak Total Power (kW)	Notes
Non UPS Loads							
Heat Rejection Equipment (eg. Chillers)	16	152,22	54,38	16	870,13kW	2435,44kW	refer to Cooling Equipment Annual kWh - n.2 system, 1 per each datahall, N+1 (7+1),
Building Shared LV Systems (BMS, CCTV etc)	1	26,80	26,80	1	26,80kW	26,80kW	
Ground Floor Light & Power	1	144,25	18,05	1	18,05kW	144,25kW	
First Floor Light & Power (if applicable)	1	144,25	18,05	1	18,05kW	144,25kW	
Second Floor Light & Power (if applicable)	0	0,00	0,00	0	0,00kW	0,00kW	
Life & Safety Power	1	13,40	13,40	1	13,40kW	13,40kW	
Lifts Passenger (if applicable)	2	10,00	1,14	2	2,28kW	20,00kW	
Lifts Service (if applicable)	1	20,00	1,14	1	1,14kW	20,00kW	
HVAC for office and critical support areas	1	156,15	140,30	1	140,30kW	156,15kW	
Other - Please describe	0	0,00	0,00	0	0,00kW	0,00kW	
				Total Non UPS Load	**1090,16kW**	**2960,29kW**	

IT UPS							**BR 6+1 per each DHs - 14 modules in total**
IT Load - 1 chiller module	10	1750,00kW	1750,00kW	10	8750,00kW	8750,00kW	Modules that supply 1 chiller and more IT load
Battery Charging + Losses	10	70,00kW	70,00kW	10	350,00kW	350,00kW	4% battery recharge
IT Load - 2 chiller module	2	1250,00kW	1250,00kW	2	1250,00kW	1250,00kW	Modules that supply 2 chiller and less IT load
Battery Charging + Losses	2	50,00kW	50,00kW	2	50,00kW	50,00kW	4% battery recharge
IT Load - Reserve	2	1750,00kW	0,00kW	0	0,00kW	0,00kW	Reserve
Battery Charging + Losses	2	70,00kW	0,00kW	0	0,00kW	0,00kW	4% battery recharge
				Total IT UPS Input	**10400,00kW**	**10400,00kW**	

Mech UPS							
Pump Motors					0,00kW	0,00kW	*Included in the chiller load calculation*
Data Hall Cooling Units (CRAH, FW, etc)	2	714,00kW	608,00kW	2	1216,00kW	1428,00kW	*18 FWU in N+2, 12 CDU in N+1 per each Datahall (FWU = 29kW, CDU = 16kW)*
Critical Support Area Cooling Units	2	66,05kW	32,38kW	2	64,76kW	132,10kW	
Building Low Voltage Critical Loads	1	50,00kW	50,00kW	1	50,00kW	50,00kW	*MDF and IDF rack loads*
Fuel System Loads					0,00kW	0,00kW	*n/a - Belly tank*
Battery Charging + Losses	1	33,20kW	27,62kW	1	27,62kW	33,20kW	
Other - Please describe					0,00kW	0,00kW	*n/a*
				Total Mech UPS Input	***1358,38kW***	***1643,30kW***	

Maximum Facility Load	**12848,53kW**	**15003,59kW**
Facility PUE	**1,285**	**1,500**

PUE Calculation 25 %

Vendor Notes	
Reservation Size (MW)	

	Number of Components Total	Peak Power per Component (kW)	Annualized Average Power per Component (kW)	Number of Components Active	Annualized Average Total Power (kW)	Peak Total Power (kW)	Notes
Non UPS Loads							
Heat Rejection Equipment (eg. Chillers)	8	152,22	54,38	8	435,06kW	1217,72kW	refer to Cooling Equipment Annual kWh - n.2 system, 1 per each datahall, N+1 (7+1),
Building Shared LV Systems (BMS, CCTV etc)	1	26,80	26,80	1	26,80kW	26,80kW	
Ground Floor Light & Power	1	144,25	18,05	1	18,05kW	144,25kW	
First Floor Light & Power (if applicable)	1	144,25	18,05	1	18,05kW	144,25kW	
Second Floor Light & Power (if applicable)	0	0,00	0,00	0	0,00kW	0,00kW	
Life & Safety Power	1	13,40	13,40	1	13,40kW	13,40kW	
Lifts Passenger (if applicable)	2	10,00	1,14	2	2,28kW	20,00kW	
Lifts Service (if applicable)	1	20,00	1,14	1	1,14kW	20,00kW	
HVAC for office and critical support areas	1	156,15	140,30	1	140,30kW	156,15kW	
Other - Please describe	0	0,00	0,00	0	0,00kW	0,00kW	
				Total Non UPS Load	**655,09kW**	**1742,57kW**	

IT UPS							**BR 6+1 per each DHs - 14 modules in total**
IT Load - 1 chiller module	10	1750,00kW	1750,00kW	10	4375,00kW	4375,00kW	Modules that supply 1 chiller and more IT load
Battery Charging + Losses	10	70,00kW	70,00kW	10	175,00kW	175,00kW	4% battery recharge
IT Load - 2 chiller module	2	1250,00kW	1250,00kW	2	625,00kW	625,00kW	Modules that supply 2 chiller and less IT load
Battery Charging + Losses	2	50,00kW	50,00kW	2	25,00kW	25,00kW	4% battery recharge
IT Load - Reserve	1	1750,00kW	0,00kW	0	0,00kW	0,00kW	Reserve
Battery Charging + Losses	1	70,00kW	0,00kW	0	0,00kW	0,00kW	4% battery recharge
				Total IT UPS Input	**5200,00kW**	**5200,00kW**	

Mech UPS							
Pump Motors					0,00kW	0,00kW	*Included in the chiller load calculation*
Data Hall Cooling Units (CRAH, FW, etc)	2	714,00kW	608,00kW	2	1216,00kW	1428,00kW	*18 FWU in N+2, 12 CDU in N+1 per each Datahall (FWU = 29kW, CDU = 16kW)*
Critical Support Area Cooling Units	2	66,05kW	32,38kW	2	64,76kW	132,10kW	
Building Low Voltage Critical Loads	1	50,00kW	50,00kW	1	50,00kW	50,00kW	*MDF and IDF rack loads*
Fuel System Loads					0,00kW	0,00kW	*n/a - Belly tank*
Battery Charging + Losses	1	33,20kW	27,62kW	1	27,62kW	33,20kW	
Other - Please describe					0,00kW	0,00kW	*n/a*
				Total Mech UPS Input	***1358,38kW***	***1643,30kW***	

Maximum Facility Load	**7213,47kW**	**8585,87kW**
Facility PUE	**1,443**	**1,717**

Vendor to use this sheet to help tabulate all annualized loads needed for PUE calculation sheet

SN	Loads	Expected running hours	Peak kW
1.1	**Chiller 100%**	**8760**	**332**
1.2	**Chiller 75%**	**8760**	**232**
1.3	**Chiller 50%**	**8760**	**152**
1.4	**Chiller 25%**	**8760**	**152**
2	**Ground Floor Light & Power**		**144**
2.1	GF Light - Admin	2500	16
2.2	GF Power - Admin	2500	27
2.3	GF Light - DC	500	45
2.4	GF Power - DC	500	56
3	**First Floor Light & Power**		**144**
3.1	FF Light - Admin	2500	16
3.2	FF Power - Admin	2500	27
3.3	Mezzanine Light - DC	500	45
3.4	Mezzanine Power - DC	500	56
4	**Building Shared LV Systems**	**8760**	**27**
5	**Life Safety Systems**	**8760**	**13**
6	**Lifts Passenger**	**1000**	**10**
7	**Lifts Service**	**500**	**20**
8	**HVAC for office and critical support areas**		**156**
8.1	Office AHU (winter)	1250	48
8.2	Office AHU (summer)	1250	42
8.3	Office VRV internal units	2500	4
8.4	N.3 VRV external units (winter)	1250	22
8.5	N.3 VRV external units (summer)	1250	40
8.6	AHU DH (winter)	4380	84
8.7	AHU DH (summer)	4380	33
8.8	AHU DH 2 (winter)	4380	84
8.9	AHU DH 2 (summer)	4380	33
9	**Pump Motors**		
9.1		8760	
9.2		8760	
10	**Data Hall Cooling Units**	**8760**	**714,00**
10.1	Fanwall	8760	522
10.3	CDU	8760	192
11	**Critical Support Area Cooling Units**		**66**
11.1	AHU DH (winter)	4380	38
11.2	AHU DH (summer)	4380	15
11.5	HEAT RECOVERY LOBBY DH 10MW 1	2500	3
11.6	PM Crahs	4380	10
12	**Building Low Voltage Critical Loads**	**8760**	**50**

S			
kWH	Annualized kW	*NOTE*	Parametrical data
2904660	**127,29**		
2032722	**84,96**		
1333405	**54,38**		
1333405	**54,38**		
	18,05		Area
40312,5	4,60		Lighting loads
67187,5	7,67		Small power loads
22500	2,57		BMS
28125	3,21		CCTV
	18,05		Life Safety
40312,5	4,60		
67187,5	7,67		Lifts Passenger
22500	2,57		Lifts Service
28125	3,21		
234768	**26,80**		
117384	**13,40**		
10000	**1,14**		
10000	**1,14**		
1229050	**140**		
59937,5	6,84		
52625	6,01		
10000	1,14		
27500	3,14		
50125	5,72		
369453	42,18		
144978	16,55		
369453	42,18		
144978	16,55		
0	**0,00**		
0	0,00		
0	0,00		
	608,00		
4572720	464,00	*18 FWU per DH in N+2*	
1681920	144,00	*12 CDU per DH in N+2*	
	32		
164469	18,78		
66576	7,60		
7500	0,86		
45114	5,15		
438000	**50,00**		

Admin	DC	
1075	4500	sqm (circa)
15	10	W/mq
25	12,5	W/mq
2	2,5	W/mq
2	2,5	W/mq
2	2,5	W/mq
10	kW	
20	kW	

EXAMPLE																				
Bin Lower Limit (C)	Bin Upper Limit (C)	Bin Average Temp (C)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg WBT	Total Hrs/year	Estimated IkW/Chiller	# of Chillers Running	Estimated IkW for ## Chillers	Total Chiller Consumption in the Temp Bin
46	49	48,8	0	0	0	0	0	0	2	0	0	0	0	0	24,3	2	500,6	10	5.006	10.012
43	46	44,5	0	0	0	0	5	4	19	28	0	0	0	0	23,2	56	450,6	10	4.506	252.336
41	43	42	0	0	0	3	18	37	55	75	23	0	0	0	23,6	211	413,5	10	4.135	872.485
38	41	39,5	0	0	3	20	47	108	139	112	93	9	0	0	24,6	531	383,4	10	3.834	2.035.854
35	38	36,5	0	0	6	28	90	84	93	105	83	48	0	0	24,3	537	351,7	10	3.517	1.888.629
32	35	33,5	0	5	14	47	130	113	147	158	142	117	17	0	24,6	890	318,0	10	3.180	2.830.200
29	32	30,5	0	26	35	84	129	166	164	176	185	133	56	1	24,3	1155	287,3	10	2.873	3.318.315
27	29	28	9	36	71	135	142	151	115	80	141	165	166	48	22,5	1259	263,7	10	2.637	3.319.983
24	27	25,5	45	67	133	172	132	54	10	10	53	152	147	103	20,1	1078	242,2	10	2.422	2.610.916
21	24	22,5	121	132	139	124	44	3	0	0	0	94	149	121	18,2	927	218,6	10	2.186	2.026.422
18	21	19,5	159	133	170	100	7	0	0	0	0	26	138	208	16,8	941	199,9	10	1.999	1.881.059
16	18	17	179	135	117	7	0	0	0	0	0	0	47	168	14,8	653		10	-	-
13	16	14,5	170	96	49	0	0	0	0	0	0	0	0	81	12,6	396		10	-	-
10	13	11,5	58	40	7	0	0	0	0	0	0	0	0	12	10,8	117		10	-	-
7	10	8,5	3	1	0	0	0	0	0	0	0	0	0	2	8,1	6		10	-	-
4	7	5,5	0	1	0	0	0	0	0	0	0	0	0	0	5,0	1		10	-	-
Total			**744**	**672**	**744**	**720**	**744**	**720**	**744**	**744**	**720**	**744**	**720**	**744**		**8760**	240,25	10		**21.046.211**

100 % Load																				
Bin Lower Limit (C)	Bin Upper Limit (C)	Bin Average Temp (C)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Avg WBT**	Total Hrs/year	Estimated IkW/Chiller	# of Chillers Running	Estimated IkW for ## Chillers	Total Chiller Consumption in the Temp Bin
-5,5	-4.6	-5	0	0	0	0	0	0	0	0	0	0	0	0		0	39	16	630	-
-4,5	-3,6	**-4**	0	0	0	0	0	0	0	0	0	0	0	3		2,5	41	16	649	1.623
-3,5	-2,6	**-3**	11	0	0	0	0	0	0	0	0	0	0	22		33	42	16	672	22.161
-2,5	-1,6	**-2**	23	0	0	0	0	0	0	0	0	0	0	35		57,5	44	16	697	40.050
-1,5	-0,6	**-1**	31	0	0	0	0	0	0	0	0	0	0	52		83	45	16	724	60.082
-0,5	0,4	**0**	65	0	4	0	0	0	0	0	0	0	0	80		148	47	16	759	112.260
0,5	1,4	**1**	82	0	26	0	0	0	0	0	0	0	12	95		214	50	16	799	170.937
1,5	2,4	**2**	106	14	11	0	0	0	0	0	0	0	23	96		249	53	16	848	211.218
2,5	3,4	**3**	130	37	19	0	0	0	0	0	0	0	42	82		309,5	57	16	909	281.302
3,5	4,4	**4**	106	55	19	0	0	0	0	0	0	0	68	68		314	62	16	989	310.405
4,5	5,4	**5**	66	70	17	0	0	0	0	0	0	0	86	73		311,5	64	16	1.031	321.045
5,5	6,4	**6**	53	109	40	0	0	0	0	0	0	0	93	58		352	68	16	1.084	381.676
6,5	7,4	**7**	31	112	39	26	0	0	0	0	0	0	85	42		333,5	72	16	1.145	382.016
7,5	8,4	**8**	16	85	66	61	2	0	0	0	0	5	71	19		323,5	76	16	1.222	395.290
8,5	9,4	**9**	12	74	101	85	18	0	0	0	0	11	64	7		370,5	83	16	1.320	489.144
9,5	10,4	**10**	9	52	62	60	20	0	0	0	2	33	62	6		303,5	90	16	1.436	435.835
10,5	11,4	**11**	5	33	54	52	16	0	0	0	3	47	44	5		256,5	88	16	1.402	359.526
11,5	12,4	**12**	2	17	72	61	28	0	0	0	9	85	33	0		304	93	16	1.481	450.240
12,5	13,4	**13**	0	11	47	56	50	3	0	0	12	126	20	1		324,5	99	16	1.577	511.800
13,5	14,4	**14**	0	4	40	59	70	25	0	0	22	130	12	3		363	105	16	1.682	610.450
14,5	15,4	**15**	0	2	28	50	67	12	0	4	23	75	6	1		264,5	112	16	1.795	474.710
15,5	16,4	**16**	0	1	32	45	57	19	18	10	31	73	2	0		286	119	16	1.910	546.142
16,5	17,4	**17**	0	0	32	34	68	20	28	15	69	57	1	0		321,5	127	16	2.032	653.412
17,5	18,4	**18**	0	0	20	35	67	31	36	20	63	41	0	0		311,5	135	16	2.166	674.738
18,5	19,4	**19**	0	0	10	20	44	51	37	38	74	26	0	0		298,5	151	16	2.411	719.776
19,5	20,4	**20**	0	0	5	17	43	53	64	57	76	22	0	0		336	172	16	2.752	924.609
20,5	21,4	**21**	0	0	3	23	41	40	56	85	69	14	0	0		328,5	184	16	2.942	966.418
21,5	22,4	**22**	0	0	2	18	49	43	81	79	59	3	0	0		331	195	16	3.121	1.032.950
22,5	23,4	**23**	0	0	0	10	42	45	67	89	58	1	0	0		309	207	16	3.308	1.022.079
23,5	24,4	**24**	0	0	0	8	27	48	52	90	45	0	0	0		268,5	219	16	3.503	940.499
24,5	25,4	**25**	0	0	0	5	19	65	61	89	32	0	0	0		268,5	232	16	3.708	995.485
25,5	26,4	**26**	0	0	0	1	15	60	67	67	30	0	0	0		238	245	16	3.923	933.582
26,5	27,4	**27**	0	0	0	0	5	47	58	42	20	0	0	0		171	259	16	4.144	708.621
27,5	28,4	**28**	0	0	0	0	1	31	47	25	15	0	0	0		117	274	16	4.382	512.713
28,5	29,4	**29**	0	0	0	0	0	30	47	19	9	0	0	0		104	275	16	4.395	457.088
29,5	30,4	**30**	0	0	0	0	0	35	24	13	3	0	0	0		74	291	16	4.650	344.107
30,5	31,4	**31**	0	0	0	0	0	36	5	5	2	0	0	0		46	299	16	4.779	219.815
31,5	32,4	**32**	0	0	0	0	0	18	1	1	1	0	0	0		19,5	306	16	4.901	95.560
32,5	33,4	**33**	0	0	0	0	0	9	1	0	0	0	0	0		9,5	314	16	5.029	47.772
33,5	34,4	**34**	0	0	0	0	0	5	0	0	0	0	0	0		4,5	323	16	5.166	23.245
34,5	35,4	35	0	0	0	0	0	0	0	0	0	0	0	0		0	332	16	5.305	-
Total			**744**	**672**	**744**	**720**	**744**	**720**	**744**	**744**	**720**	**744**	**720**	**744**		**8760**	**127,29**	16		**17.840.382**

75 % Load																				
Bin Lower Limit (C)	Bin Upper Limit (C)	Bin Average Temp (C)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Avg WBT**	Total Hrs/year	Estimated IkW/Chiller	# of Chillers Running	Estimated IkW for ## Chillers	Total Chiller Consumption in the Temp Bin
-5,5	-4.6	-5	0	0	0	0	0	0	0	0	0	0	0	0		0	27	16	434	-
-4,5	-3,6	**-4**	0	0	0	0	0	0	0	0	0	0	0	3		2,5	28	16	441	1.104
-3,5	-2,6	**-3**	11	0	0	0	0	0	0	0	0	0	0	22		33	28	16	451	14.871
-2,5	-1,6	**-2**	23	0	0	0	0	0	0	0	0	0	0	35		57,5	29	16	462	26.538
-1,5	-0,6	**-1**	31	0	0	0	0	0	0	0	0	0	0	52		83	30	16	475	39.393
-0,5	0,4	**0**	65	0	4	0	0	0	0	0	0	0	0	80		148	31	16	490	72.566
0,5	1,4	**1**	82	0	26	0	0	0	0	0	0	0	12	95		214	32	16	509	108.954
1,5	2,4	**2**	106	14	11	0	0	0	0	0	0	0	23	96		249	33	16	534	132.952
2,5	3,4	**3**	130	37	19	0	0	0	0	0	0	0	42	82		309,5	35	16	564	174.563
3,5	4,4	**4**	106	55	19	0	0	0	0	0	0	0	68	68		314	37	16	599	188.243
4,5	5,4	**5**	66	70	17	0	0	0	0	0	0	0	86	73		311,5	40	16	640	199.373
5,5	6,4	**6**	53	109	40	0	0	0	0	0	0	0	93	58		352	43	16	690	242.899
6,5	7,4	**7**	31	112	39	26	0	0	0	0	0	0	85	42		333,5	47	16	751	250.570
7,5	8,4	**8**	16	85	66	61	2	0	0	0	0	5	71	19		323,5	52	16	825	266.909
8,5	9,4	**9**	12	74	101	85	18	0	0	0	0	11	64	7		370,5	55	16	877	324.845
9,5	10,4	**10**	9	52	62	60	20	0	0	0	2	33	62	6		303,5	57	16	918	278.541
10,5	11,4	**11**	5	33	54	52	16	0	0	0	3	47	44	5		256,5	60	16	967	248.012
11,5	12,4	**12**	2	17	72	61	28	0	0	0	9	85	33	0		304	65	16	1.035	314.777
12,5	13,4	**13**	0	11	47	56	50	3	0	0	12	126	20	1		324,5	70	16	1.120	363.463
13,5	14,4	**14**	0	4	40	59	70	25	0	0	22	130	12	3		363	76	16	1.217	441.874
14,5	15,4	**15**	0	2	28	50	67	12	0	4	23	75	6	1		264,5	83	16	1.328	351.139
15,5	16,4	**16**	0	1	32	45	57	19	18	10	31	73	2	0		286	91	16	1.448	414.212
16,5	17,4	**17**	0	0	32	34	68	20	28	15	69	57	1	0		321,5	85	16	1.354	435.437
17,5	18,4	**18**	0	0	20	35	67	31	36	20	63	41	0	0		311,5	91	16	1.450	451.692
18,5	19,4	**19**	0	0	10	20	44	51	37	38	74	26	0	0		298,5	97	16	1.553	463.594
19,5	20,4	**20**	0	0	5	17	43	53	64	57	76	22	0	0		336	104	16	1.663	558.843
20,5	21,4	**21**	0	0	3	23	41	40	56	85	69	14	0	0		328,5	112	16	1.799	591.099
21,5	22,4	**22**	0	0	2	18	49	43	81	79	59	3	0	0		331	122	16	1.956	647.316
22,5	23,4	**23**	0	0	0	10	42	45	67	89	58	1	0	0		309	133	16	2.132	658.863
23,5	24,4	**24**	0	0	0	8	27	48	52	90	45	0	0	0		268,5	146	16	2.334	626.612
24,5	25,4	**25**	0	0	0	5	19	65	61	89	32	0	0	0		268,5	158	16	2.532	679.788
25,5	26,4	**26**	0	0	0	1	15	60	67	67	30	0	0	0		238	170	16	2.725	648.556
26,5	27,4	**27**	0	0	0	0	5	47	58	42	20	0	0	0		171	181	16	2.894	494.871
27,5	28,4	**28**	0	0	0	0	1	31	47	25	15	0	0	0		117	192	16	3.070	359.217
28,5	29,4	**29**	0	0	0	0	0	30	47	19	9	0	0	0		104	193	16	3.096	321.946
29,5	30,4	**30**	0	0	0	0	0	35	24	13	3	0	0	0		74	205	16	3.288	243.282
30,5	31,4	**31**	0	0	0	0	0	36	5	5	2	0	0	0		46	210	16	3.362	154.666
31,5	32,4	**32**	0	0	0	0	0	18	1	1	1	0	0	0		19,5	215	16	3.446	67.201
32,5	33,4	**33**	0	0	0	0	0	9	1	0	0	0	0	0		9,5	221	16	3.537	33.601
33,5	34,4	**34**	0	0	0	0	0	5	0	0	0	0	0	0		4,5	226	16	3.622	16.298
34,5	35,4	35	0	0	0	0	0	0	0	0	0	0	0	0		0	232	16	3.713	-
Total			**744**	**672**	**744**	**720**	**744**	**720**	**744**	**744**	**720**	**744**	**720**	**744**		**8760**	**84,96**	16		**11.908.675**

50 % Load																				
Limit (C)	Limit (C)	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Avg WBT**	Hrs/year	IkW/Chiller	Running	Estimated IkW for ## Chillers	Consumption in the

-5,5	-4.6	-5	0	0	0	0	0	0	0	0	0	0	0	0		0	20	16	317	-
-4,5	-3,6	**-4**	0	0	0	0	0	0	0	0	0	0	0	3		2,5	20	16	319	799
-3,5	-2,6	**-3**	11	0	0	0	0	0	0	0	0	0	0	22		33	20	16	322	10.617
-2,5	-1,6	**-2**	23	0	0	0	0	0	0	0	0	0	0	35		57,5	20	16	324	18.656
-1,5	-0,6	**-1**	31	0	0	0	0	0	0	0	0	0	0	52		83	20	16	328	27.201
-0,5	0,4	**0**	65	0	4	0	0	0	0	0	0	0	0	80		148	21	16	332	49.082
0,5	1,4	**1**	82	0	26	0	0	0	0	0	0	0	12	95		214	21	16	337	72.024
1,5	2,4	**2**	106	14	11	0	0	0	0	0	0	0	23	96		249	21	16	343	85.448
2,5	3,4	**3**	130	37	19	0	0	0	0	0	0	0	42	82		309,5	22	16	351	108.686
3,5	4,4	**4**	106	55	19	0	0	0	0	0	0	0	68	68		314	23	16	361	113.310
4,5	5,4	**5**	66	70	17	0	0	0	0	0	0	0	86	73		311,5	23	16	373	116.139
5,5	6,4	**6**	53	109	40	0	0	0	0	0	0	0	93	58		352	24	16	388	136.539
6,5	7,4	**7**	31	112	39	26	0	0	0	0	0	0	85	42		333,5	25	16	407	135.811
7,5	8,4	**8**	16	85	66	61	2	0	0	0	0	5	71	19		323,5	27	16	433	139.933
8,5	9,4	**9**	12	74	101	85	18	0	0	0	0	11	64	7		370,5	29	16	466	172.727
9,5	10,4	**10**	9	52	62	60	20	0	0	0	2	33	62	6		303,5	32	16	511	155.000
10,5	11,4	**11**	5	33	54	52	16	0	0	0	3	47	44	5		256,5	35	16	567	145.492
11,5	12,4	**12**	2	17	72	61	28	0	0	0	9	85	33	0		304	40	16	640	194.622
12,5	13,4	**13**	0	11	47	56	50	3	0	0	12	126	20	1		324,5	46	16	742	240.655
13,5	14,4	**14**	0	4	40	59	70	25	0	0	22	130	12	3		363	47	16	756	274.491
14,5	15,4	**15**	0	2	28	50	67	12	0	4	23	75	6	1		264,5	49	16	780	206.223
15,5	16,4	**16**	0	1	32	45	57	19	18	10	31	73	2	0		286	51	16	818	234.084
16,5	17,4	**17**	0	0	32	34	68	20	28	15	69	57	1	0		321,5	55	16	879	282.518
17,5	18,4	**18**	0	0	20	35	67	31	36	20	63	41	0	0		311,5	60	16	968	301.448
18,5	19,4	**19**	0	0	10	20	44	51	37	38	74	26	0	0		298,5	67	16	1.066	318.163
19,5	20,4	**20**	0	0	5	17	43	53	64	57	76	22	0	0		336	73	16	1.171	393.578
20,5	21,4	**21**	0	0	3	23	41	40	56	85	69	14	0	0		328,5	80	16	1.287	422.867
21,5	22,4	**22**	0	0	2	18	49	43	81	79	59	3	0	0		331	91	16	1.460	483.378
22,5	23,4	**23**	0	0	0	10	42	45	67	89	58	1	0	0		309	103	16	1.647	508.867
23,5	24,4	**24**	0	0	0	8	27	48	52	90	45	0	0	0		268,5	101	16	1.616	433.896
24,5	25,4	**25**	0	0	0	5	19	65	61	89	32	0	0	0		268,5	100	16	1.598	429.084
25,5	26,4	**26**	0	0	0	1	15	60	67	67	30	0	0	0		238	98	16	1.574	374.524
26,5	27,4	**27**	0	0	0	0	5	47	58	42	20	0	0	0		171	106	16	1.699	290.510
27,5	28,4	**28**	0	0	0	0	1	31	47	25	15	0	0	0		117	115	16	1.835	214.685
28,5	29,4	**29**	0	0	0	0	0	30	47	19	9	0	0	0		104	120	16	1.921	199.802
29,5	30,4	**30**	0	0	0	0	0	35	24	13	3	0	0	0		74	131	16	2.103	155.589
30,5	31,4	**31**	0	0	0	0	0	36	5	5	2	0	0	0		46	136	16	2.169	99.762
31,5	32,4	**32**	0	0	0	0	0	18	1	1	1	0	0	0		19,5	140	16	2.235	43.580
32,5	33,4	**33**	0	0	0	0	0	9	1	0	0	0	0	0		9,5	144	16	2.301	21.862
33,5	34,4	**34**	0	0	0	0	0	5	0	0	0	0	0	0		4,5	148	16	2.368	10.656
34,5	35,4	35	0	0	0	0	0	0	0	0	0	0	0	0		0	152	16	2.435	-
Total			**744**	**672**	**744**	**720**	**744**	**720**	**744**	**744**	**720**	**744**	**720**	**744**		**8760**	**54,38**	16		**7.622.307**

25 % Load

Limit (C)	Limit (C)	Average	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Avg WBT**	Hrs/year	IkW/Chiller	Running	Estimated IkW for ## Chillers	Consumption in the
-5,5	-4.6	-5	0	0	0	0	0	0	0	0	0	0	0	0		0	20	8	159	-
-4,5	-3,6	**-4**	0	0	0	0	0	0	0	0	0	0	0	3		2,5	20	8	160	399
-3,5	-2,6	**-3**	11	0	0	0	0	0	0	0	0	0	0	22		33	20	8	161	5.308
-2,5	-1,6	**-2**	23	0	0	0	0	0	0	0	0	0	0	35		57,5	20	8	162	9.328
-1,5	-0,6	**-1**	31	0	0	0	0	0	0	0	0	0	0	52		83	20	8	164	13.600
-0,5	0,4	**0**	65	0	4	0	0	0	0	0	0	0	0	80		148	21	8	166	24.541
0,5	1,4	**1**	82	0	26	0	0	0	0	0	0	0	12	95		214	21	8	168	36.012
1,5	2,4	**2**	106	14	11	0	0	0	0	0	0	0	23	96		249	21	8	172	42.724
2,5	3,4	**3**	130	37	19	0	0	0	0	0	0	0	42	82		309,5	22	8	176	54.343
3,5	4,4	**4**	106	55	19	0	0	0	0	0	0	0	68	68		314	23	8	180	56.655
4,5	5,4	**5**	66	70	17	0	0	0	0	0	0	0	86	73		311,5	23	8	186	58.069
5,5	6,4	**6**	53	109	40	0	0	0	0	0	0	0	93	58		352	24	8	194	68.269
6,5	7,4	**7**	31	112	39	26	0	0	0	0	0	0	85	42		333,5	25	8	204	67.905
7,5	8,4	**8**	16	85	66	61	2	0	0	0	0	5	71	19		323,5	27	8	216	69.967
8,5	9,4	**9**	12	74	101	85	18	0	0	0	0	11	64	7		370,5	29	8	233	86.364
9,5	10,4	**10**	9	52	62	60	20	0	0	0	2	33	62	6		303,5	32	8	255	77.500
10,5	11,4	**11**	5	33	54	52	16	0	0	0	3	47	44	5		256,5	35	8	284	72.746
11,5	12,4	**12**	2	17	72	61	28	0	0	0	9	85	33	0		304	40	8	320	97.311
12,5	13,4	**13**	0	11	47	56	50	3	0	0	12	126	20	1		324,5	46	8	371	120.328
13,5	14,4	**14**	0	4	40	59	70	25	0	0	22	130	12	3		363	47	8	378	137.246
14,5	15,4	**15**	0	2	28	50	67	12	0	4	23	75	6	1		264,5	49	8	390	103.111
15,5	16,4	**16**	0	1	32	45	57	19	18	10	31	73	2	0		286	51	8	409	117.042
16,5	17,4	**17**	0	0	32	34	68	20	28	15	69	57	1	0		321,5	55	8	439	141.259
17,5	18,4	**18**	0	0	20	35	67	31	36	20	63	41	0	0		311,5	60	8	484	150.724
18,5	19,4	**19**	0	0	10	20	44	51	37	38	74	26	0	0		298,5	67	8	533	159.081
19,5	20,4	**20**	0	0	5	17	43	53	64	57	76	22	0	0		336	73	8	586	196.789
20,5	21,4	**21**	0	0	3	23	41	40	56	85	69	14	0	0		328,5	80	8	644	211.434
21,5	22,4	**22**	0	0	2	18	49	43	81	79	59	3	0	0		331	91	8	730	241.689
22,5	23,4	**23**	0	0	0	10	42	45	67	89	58	1	0	0		309	103	8	823	254.433
23,5	24,4	**24**	0	0	0	8	27	48	52	90	45	0	0	0		268,5	101	8	808	216.948
24,5	25,4	**25**	0	0	0	5	19	65	61	89	32	0	0	0		268,5	100	8	799	214.542
25,5	26,4	**26**	0	0	0	1	15	60	67	67	30	0	0	0		238	98	8	787	187.262
26,5	27,4	**27**	0	0	0	0	5	47	58	42	20	0	0	0		171	106	8	849	145.255
27,5	28,4	**28**	0	0	0	0	1	31	47	25	15	0	0	0		117	115	8	917	107.343
28,5	29,4	**29**	0	0	0	0	0	30	47	19	9	0	0	0		104	120	8	961	99.901
29,5	30,4	**30**	0	0	0	0	0	35	24	13	3	0	0	0		74	131	8	1.051	77.795
30,5	31,4	**31**	0	0	0	0	0	36	5	5	2	0	0	0		46	136	8	1.084	49.881
31,5	32,4	**32**	0	0	0	0	0	18	1	1	1	0	0	0		19,5	140	8	1.117	21.790
32,5	33,4	**33**	0	0	0	0	0	9	1	0	0	0	0	0		9,5	144	8	1.151	10.931
33,5	34,4	**34**	0	0	0	0	0	5	0	0	0	0	0	0		4,5	148	8	1.184	5.328
34,5	35,4	35	0	0	0	0	0	0	0	0	0	0	0	0		0	152	8	1.218	-
Total			**744**	**672**	**744**	**720**	**744**	**720**	**744**	**744**	**720**	**744**	**720**	**744**		**8760**	**54,38**	8		**3.811.153**